
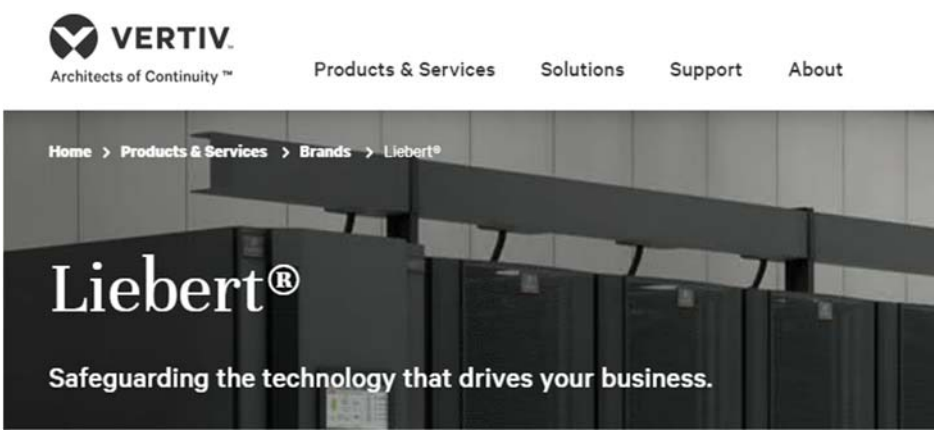





Exhibit 9



U.S. Patent No. 6,854,287 – Infringement Claim Chart

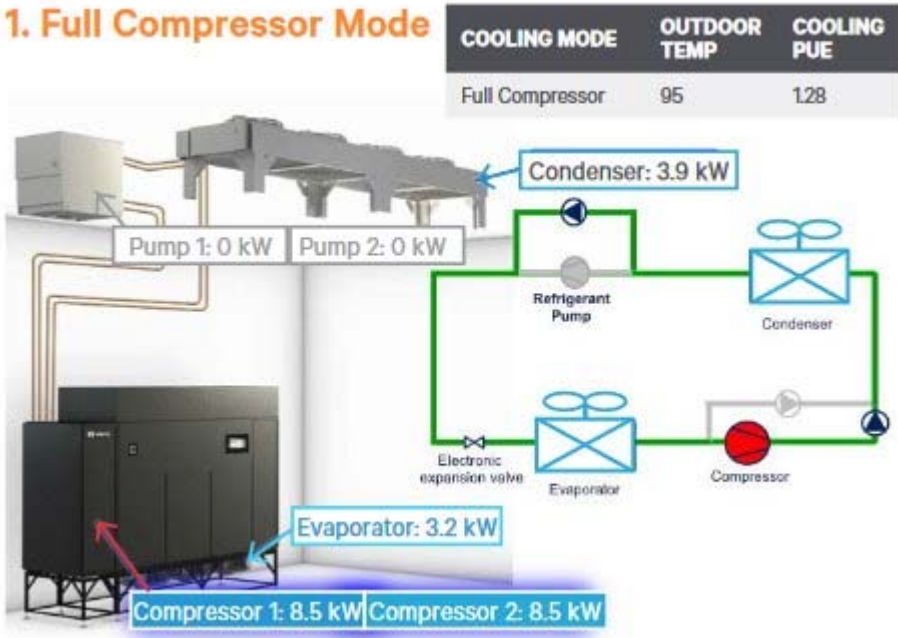
Claim 1	Exemplary Evidence of Infringement by CyrusOne
<p>[1pre] A method for cooling a room configured to house a plurality of computer systems, said method comprising:</p>	<p>CyrusOne’s data centers use a method for cooling a room configured to house a plurality of computer systems.</p> <p>For example, CyrusOne uses Vertiv (Liebert) CRAC units in each colocation data center. Liebert CRAC units are controlled by Liebert’s iCOM Intelligent Communication and Monitoring system.</p> <div><div><p>CIN99</p><p>CyrusOne Data Center Cincinnati - Blue Ash 4600 McAuley Place, 4th Floor Cincinnati, OH 45242</p><p>Located on McAuley Place, this Cincinnati data center facility is for customers that require a robust data center for mission-critical applications, as well as for disaster recovery and business continuity environments.</p></div><div><div><p>Overview</p><ul style="list-style-type: none">• 15,000 sq. ft. data center/8,000 colo square feet (CSF)• Up to 900 kW available• 12-inch raised floor design• 20, and 22 ton Liebert Downflow Chilled Water CRAC units.</div></div></div> <div data-bbox="756 1218 1627 1289" data-label="Text"><p>https://documents.cyrusone.com/wp-content/uploads/2023/06/2022-CIN97_Cincinnati.pdf, p. 1.</p></div>

Claim 1	Exemplary Evidence of Infringement by CyrusOne
	<p data-bbox="787 284 886 316">Cooling</p> <ul data-bbox="787 332 1192 544" style="list-style-type: none"><li data-bbox="787 332 955 365">• N+1 Cooling<li data-bbox="787 389 1180 422">• Redundant DX and Glycol Chillers<li data-bbox="787 446 1192 479">• Redundant raised floor CRAC units<li data-bbox="787 503 1003 535">• 12in Raised floor <hr data-bbox="756 568 1249 571"/> <p data-bbox="756 592 1627 673">https://documents.cyrusone.com/wp-content/uploads/2023/06/2022-CIN97_Cincinnati.pdf, p. 2.</p> <div data-bbox="756 738 1684 1166">A screenshot of the Vertiv Liebert website. At the top, the Vertiv logo is followed by the tagline "Architects of Continuity™". To the right are navigation links: "Products & Services", "Solutions", "Support", and "About". Below this is a breadcrumb trail: "Home > Products & Services > Brands > Liebert®". The main visual is a large image of server racks with the "Liebert®" logo overlaid in a large, white, serif font. Below the logo, the text "Safeguarding the technology that drives your business." is displayed in a smaller, white, sans-serif font.<p data-bbox="756 1185 1453 1226">https://www.vertiv.com/en-us/products/brands/liebert/</p></div>

Claim 1	Exemplary Evidence of Infringement by CyrusOne
	<div data-bbox="758 256 1866 583"><p data-bbox="1470 329 1835 532">Liebert® iCOM™ Thermal System Controls Greater Data Center Protection, Efficiency & Insight</p></div> <p data-bbox="758 609 1803 678">https://www.vertiv.com/49d637/globalassets/shared/liebert-icom-thermal-system-controls-brochure.pdf (“iCOM Brochure”).</p>

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	<p>At the cooling unit level, the Liebert iCOM unit control provides the highest protection available and optimal performance.</p> <ul style="list-style-type: none"> • Monitors 380 unit and component points to eliminate single points of failure • Self-healing features avoid passing unsafe operating thresholds • Highly intuitive, full-color, touch screen simplifies operations to save time and reduce human error • Multiple, automated unit protection routines, including lead/lag, cascade, rapid restart, refrigerant protection and valve calibration  <p>At the supervisory level, the Liebert iCOM-S system control offers a revolutionary way to harmonize and optimize thermal system performance to optimize capacity across the data center, gain quick access to actionable data, and automate system diagnostics and trending.</p> <ul style="list-style-type: none"> • Advanced monitoring and at-a-glance reporting on performance metrics and trends for efficiency, capacity and adverse events • Up to 50% system efficiency gains • 30% lower deployment costs • Teamwork modes that prevent conflict between units and allow them to adapt to changes in facility and IT demand to improve efficiency and availability and reduce system wear and tear – saving more than \$10,000 per unit per year in energy costs • Simple and easy to deploy — auto-configuration to detect and configure up to 4,800 sensors, eliminating the need for custom integration to building management systems and cutting sensor deployment times in half  <p>Liebert iCOM unit control and Liebert iCOM-S system control are available for new Vertiv™ data center cooling units or as retrofits.</p> <p>iCOM Brochure at p. 3.</p>
[1a] providing a plurality of heat exchanger units configured to receive air from said room and to deliver air to said room;	<p>CyrusOne provides a plurality of heat exchanger units configured to receive air from said room and to deliver air to said room.</p> <p>For example, CyrusOne uses Liebert CRAC units which are heat exchangers that receive air from the room and deliver cool conditioned air to the room by transferring heat from the air to a fluid.</p>

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	<div data-bbox="772 272 1018 600"> <h2>CIN99</h2> <p>CyrusOne Data Center Cincinnati - Blue Ash 4600 McAuley Place, 4th Floor Cincinnati, OH 45242</p> <p>Located on McAuley Place, this Cincinnati data center facility is for customers that require a robust data center for mission-critical applications, as well as for disaster recovery and business continuity environments.</p> </div> <div data-bbox="1056 280 1879 638">  </div> <div data-bbox="1056 670 1417 857">  </div> <div data-bbox="1449 665 1816 836"> <h2>Overview</h2> <ul style="list-style-type: none"> • 15,000 sq. ft. data center/8,000 colo square feet (CSF) • Up to 900 kW available • 12-inch raised floor design • 20, and 22 ton Liebert Downflow Chilled Water CRAC units. </div> <p>https://documents.cyrusone.com/wp-content/uploads/2023/06/2022-CIN97_Cincinnati.pdf, p. 1.</p> <div data-bbox="772 990 1165 1250"> <h2>Cooling</h2> <ul style="list-style-type: none"> • N+1 Cooling • Redundant DX and Glycol Chillers • Redundant raised floor CRAC units • 12in Raised floor </div> <p>https://documents.cyrusone.com/wp-content/uploads/2023/06/2022-CIN97_Cincinnati.pdf, p. 2.</p>

Claim 1	Exemplary Evidence of Infringement by CyrusOne
<p>[1b] supplying said plurality of heat exchanger units with cooling fluid from an air conditioning unit;</p>	<p>CyrusOne supplies said plurality of heat exchanger units with cooling fluid from an air conditioning unit.</p> <p>For example, CyrusOne uses Liebert's CRAC units which have an evaporator. Refrigerant cooling fluid flows through heat exchanger coils in evaporator.</p> <p>1. Full Compressor Mode</p>  <p>The diagram illustrates the refrigerant loop in a Liebert CRAC unit during Full Compressor Mode. A table in the top right corner shows the operating conditions: COOLING MODE is Full Compressor, OUTDOOR TEMP is 95, and COOLING PUE is 1.28. The refrigerant loop consists of the following components and their power ratings:</p> <ul style="list-style-type: none"> Condenser: 3.9 kW Refrigerant Pump Electronic expansion valve Evaporator: 3.2 kW Compressor 1: 8.5 kW Compressor 2: 8.5 kW Pump 1: 0 kW Pump 2: 0 kW <p>The diagram shows the CRAC unit (a large black cabinet) with the refrigerant loop connected to it. The loop includes a condenser, a refrigerant pump, an electronic expansion valve, and an evaporator. The evaporator is connected to the CRAC unit's heat exchanger coils. The compressors are also connected to the loop. The power ratings for each component are provided in the diagram.</p> <p>https://www.vertiv.com/49f1fd/globalassets/products/thermal-management/room-cooling/liebert-dse-sales-brochure-sl-18927_00.pdf</p> <p>CyrusOne uses Liebert CRAC units which have a chilled water control valve. Chilled water cooling fluid flows through heat exchanger coils in evaporator.</p>

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Chilled Water Control Valve

The chilled water valve provides proportional control action in response to room temperature and humidity as sensed by the microprocessor control. It includes operating linkage and electronic motor. Unlike other systems of this nature it requires no over-travel linkage or end switches to be adjusted. The control uses "intelligent logic" to eliminate valve hunting, thus greatly increasing the life of the valve. The valve can be a 3-way or 2-way to meet the appropriate requirements of the installed system.



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	https://www.vertiv.com/491dda/globalassets/products/thermal-management/room-cooling/liebert-cw-brochure.pdf .
<p>[1c] cooling said received air through heat exchange with the cooling fluid in the plurality of heat exchanger units;</p>	<p>CyrusOne cools said received air through heat exchange with the cooling fluid in the plurality of heat exchanger units.</p> <p>For example, CyrusOne uses Liebert CRAC units to cool fluid (refrigerant) through the coil. The cooling fluid through the coil is chilled water/glycol. Liebert CRAC units receive the “return air” from the room and deliver cool conditioned “supply air” to the room, by transferring heat from the air to the cooling fluid within the coil.</p> <div data-bbox="766 695 1900 1287"> </div>

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	https://www.vertiv.com/4afe7d/globalassets/products/thermal-management/room-cooling/liebert-dse-80-165kw-23-43-tons-downflow-system-design-manual.pdf , pp. 3, 6.																					
[1d] sensing temperatures at one or more locations in said room;	<p>CyrusOne senses temperatures at one or more locations in said room.</p> <p>For example, CyrusOne uses Liebert CRAC units and the Liebert CRAC unit control system senses temperatures at the supply sensor, remote sensor, or return sensor locations.</p> <p>3.1.12 Automatic Fan Speed Control</p> <p>Temperature sensors can control fan speed using one of three modes based on the type of sensor selected as the fan-control sensor: supply, return, or remote, see Table 3.2 below . Control is based on the selected sensor for both fan control and temperature control and their setpoints as follows:</p> <ul style="list-style-type: none">• Coupled: The fan control and temperature control sensor selection is the same. When coupled, fan speed is determined by the temperature setpoints.• Decoupled: The fan control and temperature control sensor selection is different. When decoupled, fan speed is determined by the fan setpoints. <p>Table 3.2 Fan Speed Controlling Sensor Options</p> <table><tr><th colspan="2" rowspan="2"></th><th colspan="3">Temperature Control Sensor Selected</th></tr><tr><th>Supply Sensor</th><th>Remote Sensor</th><th>Return Sensor</th></tr><tr><td rowspan="3">Fan Control Sensor Selected</td><td>Supply Sensor</td><td>Coupled</td><td>N/A</td><td>N/A</td></tr><tr><td>Remote Sensor</td><td>Decoupled (Recommended)</td><td>Coupled</td><td>N/A</td></tr><tr><td>Return Sensor</td><td>Decoupled</td><td>Decoupled</td><td>Coupled</td></tr></table> <p>https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf, p. 45.</p>			Temperature Control Sensor Selected			Supply Sensor	Remote Sensor	Return Sensor	Fan Control Sensor Selected	Supply Sensor	Coupled	N/A	N/A	Remote Sensor	Decoupled (Recommended)	Coupled	N/A	Return Sensor	Decoupled	Decoupled	Coupled
				Temperature Control Sensor Selected																		
		Supply Sensor	Remote Sensor	Return Sensor																		
Fan Control Sensor Selected	Supply Sensor	Coupled	N/A	N/A																		
	Remote Sensor	Decoupled (Recommended)	Coupled	N/A																		
	Return Sensor	Decoupled	Decoupled	Coupled																		

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[1e] controlling at least one of the temperature of said cooling fluid and said air delivery by said plurality of heat exchanger units to said room in response to said sensed temperatures at said one or more locations; and	<p>CyrusOne controls at least one of the temperature of said cooling fluid and said air delivery by said plurality of heat exchanger units to said room in response to said sensed temperatures at said one or more locations.</p> <p>For example, CyrusOne uses Liebert CRAC units which have temperate sensors that control fan speed in response to sensed temperatures.</p> <p>3.1.12 Automatic Fan Speed Control</p> <p>Temperature sensors can control fan speed using one of three modes based on the type of sensor selected as the fan-control sensor: supply, return, or remote, see Table 3.2 below . Control is based on the selected sensor for both fan control and <u>temperature control and their setpoints as follows:</u></p> <ul style="list-style-type: none">• Coupled: The fan control and temperature control sensor selection is the same. When coupled, fan speed is determined by the temperature setpoints.• Decoupled: The fan control and temperature control sensor selection is different. When decoupled, fan speed is determined by the fan setpoints. <p>Table 3.2 Fan Speed Controlling Sensor Options</p> <table><tr><th colspan="2" rowspan="2"></th><th colspan="3">Temperature Control Sensor Selected</th></tr><tr><th>Supply Sensor</th><th>Remote Sensor</th><th>Return Sensor</th></tr><tr><td rowspan="3">Fan Control Sensor Selected</td><td>Supply Sensor</td><td>Coupled</td><td>N/A</td><td>N/A</td></tr><tr><td>Remote Sensor</td><td>Decoupled (Recommended)</td><td>Coupled</td><td>N/A</td></tr><tr><td>Return Sensor</td><td>Decoupled</td><td>Decoupled</td><td>Coupled</td></tr></table> <p>https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf, p. 45.</p> <p>The Liebert cooling unit controls activates the flow of chilled water/glycol, and varies cooling capacity by adjusting a motorized ball valve.</p>			Temperature Control Sensor Selected			Supply Sensor	Remote Sensor	Return Sensor	Fan Control Sensor Selected	Supply Sensor	Coupled	N/A	N/A	Remote Sensor	Decoupled (Recommended)	Coupled	N/A	Return Sensor	Decoupled	Decoupled	Coupled
				Temperature Control Sensor Selected																		
		Supply Sensor	Remote Sensor	Return Sensor																		
Fan Control Sensor Selected	Supply Sensor	Coupled	N/A	N/A																		
	Remote Sensor	Decoupled (Recommended)	Coupled	N/A																		
	Return Sensor	Decoupled	Decoupled	Coupled																		

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	<p>7.1.4 Temperature Control with a Fluid Economizer</p> <p>When an economizer is installed, the cooling requirement (determined by the temperature proportional band) is addressed first by the economizer's secondary cooling. If the economizer cooling capacity is insufficient, the compressor(s) begin cooling to bring the room air temperature down to the temperature setpoint.</p> <p>The fluid economizer employs a motorized ball valve that controls the flow of chilled water/glycol to provide a cooling capacity from 0% to 100%.</p> <p>https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf, p. 110.</p>
<p>[1f] wherein the step of controlling said air delivery by said plurality of heat exchanger units comprises individually manipulating a mass flow rate of the cooling fluid supplied to each of the plurality of heat exchanger units.</p>	<p>CyrusOne controls said air delivery by said plurality of heat exchanger units comprises individually manipulating a mass flow rate of the cooling fluid supplied to each of the plurality of heat exchanger units.</p> <p>For example, CyrusOne uses Liebert CRAC units which have Teamwork mode. Teamwork mode evaluates changes in the air temperature of the inlet, outlet, or supply temperature of the heat dissipating devices and adjusts one or more cooling units controls to provide the required cooling capacity.</p> <p>6 Teamwork, Standby and Rotation for Cooling Units</p> <p>U2U communication via private network and additional hardware (see U2U Networking on page 95) allows the following operating features for the cooling units:</p> <ul style="list-style-type: none"> • Teamwork • Standby (Rotation) • Cascade <p>https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf, p. 99.</p>

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	<p>6.2.3 Teamwork Mode 1—Parallel Operation</p> <p>In Teamwork mode 1, fan speed and cooling capacity are ramped up in parallel, which means that all units operate identically.</p> <p>Teamwork mode 1 is best for small rooms with balanced heat loads. A master unit collects the controlling readings for temperature and humidity from all the operating (fan on) units in the group, then determines the average or worst-case reading, and sends operating instructions to efficiently distribute cooling capacity across available units.</p> <p>In Teamwork mode 1, most parameters are shared and, when set in any unit, are set in all units in the group.</p> <p>6.2.4 Teamwork Mode 2—Independent Operation</p> <p>Teamwork mode 2 works well for most applications, and best in large rooms with un-balanced heat loads by preventing units in a group from operating in opposing modes, some cooling and some heating. All temperature and humidity parameters are shared by the group. The master unit monitors all available unit-sensor readings and determines the demand for cooling, heating, humidification and dehumidification, then sends operating instructions to address the greatest demand.</p> <p>In Teamwork mode 2, the setpoints for all units must be identical. The proportional band, deadband, and related settings may differ by unit. Fan speed is modulated per unit. Rotation and cascading is not available, so expect uneven distribution of work hours.</p> <p>6.2.5 Teamwork Mode 3—Optimized Aisle Operation</p> <p>In Teamwork Mode 3, the fan speed for all units operates in parallel, which means fan speed operation is identical at each unit. However, cooling capacity operates independently for each unit.</p> <p>Teamwork mode 3 takes advantage of variable speed fan options and variable capacity component options to maintain rooms with an unbalanced load and to prevent units in a group from operating in opposing modes. All units operate in the same mode based on the average or worst case (maximum) readings from the unit sensors. A local control (cooling capacity supply sensor) provides input to manage and maintain the discharge-air temperature at each unit. In addition, fan speed and operation are controlled based on readings from the unit temperature or static pressure sensors to control air delivery to the cold aisle.</p> <p>https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf, p. 102.</p> <p>The Liebert CRAC units also have standby mode. Standby mode evaluates changes in the air temperature of the inlet, outlet, or supply temperature of the heat dissipating devices and activates/de-activates one or more cooling units to provide the required cooling capacity.</p>

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	<p data-bbox="795 326 1562 362">6.3 Assigning Cooling Units to Standby (Lead/Lag)</p> <p data-bbox="795 394 1856 446">Standby assigns some units to operate while others are on standby, meaning a unit is idle but ready to become active in the event of an alarm condition in one of the operating units or based on a rotation schedule.</p> <p data-bbox="795 470 1818 522">When a unit is in standby mode, fan(s) are off and no cooling occurs. In multiple cooling unit systems, assigning units to standby lets you:</p> <ul data-bbox="869 547 1856 670" style="list-style-type: none"> • Configure redundancy in case of failure scenarios (standby). • Manage cooling unit run time (lead/lag). See Setting a Rotation Schedule on the next page . • Modulate for very low loads to full design load (to be temperature reactive) by cascading activation of standby units (configured when setting up teamwork mode). <p data-bbox="753 703 1797 771">https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf, p. 103.</p>